

Patch Antenna Utilizing a Polymer Dielectric Layer

Abstract

A patch antenna includes a metallic ground plate, a metallic radiating element, and a polymer plastic dielectric layer sandwiched between the radiating element and the ground plate. Top and bottom surfaces of the dielectric layer are primed with polymeric surfactants to provide better adhesive characteristics at low temperatures. The radiating element is fixed to the dielectric layer by compressing an adhesive layer applied to the radiating element between the radiating element and the priming layer applied to the top surface of the dielectric layer. The ground plate is fixed to the dielectric layer by compressing another adhesive layer applied to the ground plate between the ground plate and the priming layer applied to the bottom surface of the dielectric layer. A low noise amplifier may be integrated with the antenna by sharing the common ground plate and connecting the amplifier's signal trace to the radiating element via a conductor pin.